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RAW SEQUENCE LISTING DATE: 08/10/2004
PATENT APPLICATION: **US/10/680,287A** TIME: 12:13:55

Input Set : **A:\032796-179.TXT**
Output Set: **N:\CRF4\08102004\J680287A.raw**

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<110> APPLICANT: Babij, Philip
      Yaworsky, Paul
      Bex, Frederick J. III
      Bodine, Peter Van Nest
<120> TITLE OF INVENTION: Transgenic Animal Model of Bone Mass Modulation
<130> FILE REFERENCE: 032796-179
<140> CURRENT APPLICATION NUMBER: US 10/680,287A
<141> CURRENT FILING DATE: 2003-10-08
<150> PRIOR APPLICATION NUMBER: PCT/US02/14876
<151> PRIOR FILING DATE: 2002-05-13
<150> PRIOR APPLICATION NUMBER: US 60/290,071
<151> PRIOR FILING DATE: 2001-05-11
<150> PRIOR APPLICATION NUMBER: US 60/291,311
<151> PRIOR FILING DATE: 2001-05-17
<150> PRIOR APPLICATION NUMBER: US 60/353,058
<151> PRIOR FILING DATE: 2002-02-01
<150> PRIOR APPLICATION NUMBER: US 60/361,293
<151> PRIOR FILING DATE: 2002-03-04
<160> NUMBER OF SEQ ID NOS: 812
<170> SOFTWARE: FastSEQ for Windows Version 4.0
<210> SEQ ID NO: 1
<211> LENGTH: 5120
<212> TYPE: DNA
<213> ORGANISM: Homo sapiens
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gccggacaac  atg gag gca gcg ccg ccc ggg ccg ccg tgg ccg ctg ctg         109
            Met Glu Ala Ala Pro Pro Gly Pro Pro Trp Pro Leu Leu
            1               5                   10
 ctg ctg ctg ctg ctg ctg ctg gcg ctg tgc ggc tgc ccg gcc ccc gcc        157
 Leu Leu Leu Leu Leu Leu Leu Ala Leu Cys Gly Cys Pro Ala Pro Ala
     15                  20                  25
 gcg gcc tcg ccg ctc ctg cta ttt gcc aac cgc cgg gac gta cgg ctg        205
 Ala Ala Ser Pro Leu Leu Leu Phe Ala Asn Arg Arg Asp Val Arg Leu
 30                  35                  40                  45
 gtg gac gcc ggc gga gtc aag ctg gag tcc acc atc gtg gtc agc ggc        253
 Val Asp Ala Gly Gly Val Lys Leu Glu Ser Thr Ile Val Val Ser Gly
                 50                  55                  60
 ctg gag gat gcg gcc gca gtg gac ttc cag ttt tcc aag gga gcc gtg        301
 Leu Glu Asp Ala Ala Ala Val Asp Phe Gln Phe Ser Lys Gly Ala Val
             65                  70                  75
 tac tgg aca gac gtg agc gag gag gcc atc aag cag acc tac ctg aac        349
 Tyr Trp Thr Asp Val Ser Glu Glu Ala Ile Lys Gln Thr Tyr Leu Asn
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p.6

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        80                  85                  90
cag acg ggg gcc gcc gtg cag aac gtg gtc atc tcc ggc ctg gtc tct        397
Gln Thr Gly Ala Ala Val Gln Asn Val Val Ile Ser Gly Leu Val Ser
    95                  100                 105
ccc gac ggc ctc gcc tgc gac tgg gtg ggc aag aag ctg tac tgg acg        445
Pro Asp Gly Leu Ala Cys Asp Trp Val Gly Lys Lys Leu Tyr Trp Thr
110                 115                 120                 125
gac tca gag acc aac cgc atc gag gtg gcc aac ctc aat ggc aca tcc        493
Asp Ser Glu Thr Asn Arg Ile Glu Val Ala Asn Leu Asn Gly Thr Ser
                130                 135                 140
cgg aag gtg ctc ttc tgg cag gac ctt gac cag ccg agg gcc atc gcc        541
Arg Lys Val Leu Phe Trp Gln Asp Leu Asp Gln Pro Arg Ala Ile Ala
            145                 150                 155
ttg gac ccc gct cac ggg tac atg tac tgg aca gac tgg ggt gag acg        589
Leu Asp Pro Ala His Gly Tyr Met Tyr Trp Thr Asp Trp Gly Glu Thr
        160                 165                 170
ccc cgg att gag cgg gca ggg atg gat ggc agc acc cgg aag atc att        637
Pro Arg Ile Glu Arg Ala Gly Met Asp Gly Ser Thr Arg Lys Ile Ile
    175                 180                 185
gtg gac tcg gac att tac tgg ccc aat gga ctg acc atc gac ctg gag        685
Val Asp Ser Asp Ile Tyr Trp Pro Asn Gly Leu Thr Ile Asp Leu Glu
190                 195                 200                 205
gag cag aag ctc tac tgg gct gac gcc aag ctc agc ttc atc cac cgt        733
Glu Gln Lys Leu Tyr Trp Ala Asp Ala Lys Leu Ser Phe Ile His Arg
                210                 215                 220
gcc aac ctg gac ggc tcg ttc cgg cag aag gtg gtg gag ggc agc ctg        781
Ala Asn Leu Asp Gly Ser Phe Arg Gln Lys Val Val Glu Gly Ser Leu
            225                 230                 235
acg cac ccc ttc gcc ctg acg ctc tcc ggg gac act ctg tac tgg aca        829
Thr His Pro Phe Ala Leu Thr Leu Ser Gly Asp Thr Leu Tyr Trp Thr
        240                 245                 250
gac tgg cag acc cgc tcc atc cat gcc tgc aac aag cgc act ggg ggg        877
Asp Trp Gln Thr Arg Ser Ile His Ala Cys Asn Lys Arg Thr Gly Gly
    255                 260                 265
aag agg aag gag atc ctg agt gcc ctc tac tca ccc atg gac atc cag        925
Lys Arg Lys Glu Ile Leu Ser Ala Leu Tyr Ser Pro Met Asp Ile Gln
270                 275                 280                 285
gtg ctg agc cag gag cgg cag cct ttc ttc cac act cgc tgt gag gag        973
Val Leu Ser Gln Glu Arg Gln Pro Phe Phe His Thr Arg Cys Glu Glu
                290                 295                 300
gac aat ggc ggc tgc tcc cac ctg tgc ctg ctg tcc cca agc gag cct        1021
Asp Asn Gly Gly Cys Ser His Leu Cys Leu Leu Ser Pro Ser Glu Pro
            305                 310                 315
ttc tac aca tgc gcc tgc ccc acg ggt gtg cag ctg cag gac aac ggc        1069
Phe Tyr Thr Cys Ala Cys Pro Thr Gly Val Gln Leu Gln Asp Asn Gly
        320                 325                 330
agg acg tgt aag gca gga gcc gag gag gtg ctg ctg ctg gcc cgg cgg        1117
Arg Thr Cys Lys Ala Gly Ala Glu Glu Val Leu Leu Leu Ala Arg Arg
    335                 340                 345
```

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acg gac cta cgg agg atc tcg ctg gac acg ccg gac ttc acc gac atc        1165
Thr Asp Leu Arg Arg Ile Ser Leu Asp Thr Pro Asp Phe Thr Asp Ile
350                 355                 360                 365
gtg ctg cag gtg gac gac atc cgg cac gcc att gcc atc gac tac gac        1213
Val Leu Gln Val Asp Asp Ile Arg His Ala Ile Ala Ile Asp Tyr Asp
                370                 375                 380
ccg cta gag ggc tat gtc tac tgg aca gat gac gag gtg cgg gcc atc        1261
Pro Leu Glu Gly Tyr Val Tyr Trp Thr Asp Asp Glu Val Arg Ala Ile
            385                 390                 395
cgc agg gcg tac ctg gac ggg tct ggg gcg cag acg ctg gtc aac acc        1309
Arg Arg Ala Tyr Leu Asp Gly Ser Gly Ala Gln Thr Leu Val Asn Thr
        400                 405                 410
gag atc aac gac ccc gat ggc atc gcg gtc gac tgg gtg gcc cga aac        1357
Glu Ile Asn Asp Pro Asp Gly Ile Ala Val Asp Trp Val Ala Arg Asn
    415                 420                 425
ctc tac tgg acc gac acg ggc acg gac cgc atc gag gtg acg cgc ctc        1405
Leu Tyr Trp Thr Asp Thr Gly Thr Asp Arg Ile Glu Val Thr Arg Leu
430                 435                 440                 445
aac ggc acc tcc cgc aag atc ctg gtg tcg gag gac ctg gac gag ccc        1453
Asn Gly Thr Ser Arg Lys Ile Leu Val Ser Glu Asp Leu Asp Glu Pro
                450                 455                 460
cga gcc atc gca ctg cac ccc gtg atg ggc ctc atg tac tgg aca gac        1501
Arg Ala Ile Ala Leu His Pro Val Met Gly Leu Met Tyr Trp Thr Asp
            465                 470                 475
tgg gga gag aac cct aaa atc gag tgt gcc aac ttg gat ggg cag gag        1549
Trp Gly Glu Asn Pro Lys Ile Glu Cys Ala Asn Leu Asp Gly Gln Glu
        480                 485                 490
cgg cgt gtg ctg gtc aat gcc tcc ctc ggg tgg ccc aac ggc ctg gcc        1597
Arg Arg Val Leu Val Asn Ala Ser Leu Gly Trp Pro Asn Gly Leu Ala
    495                 500                 505
ctg gac ctg cag gag ggg aag ctc tac tgg gga gac gcc aag aca gac        1645
Leu Asp Leu Gln Glu Gly Lys Leu Tyr Trp Gly Asp Ala Lys Thr Asp
510                 515                 520                 525
aag atc gag gtg atc aat gtt gat ggg acg aag agg cgg acc ctc ctg        1693
Lys Ile Glu Val Ile Asn Val Asp Gly Thr Lys Arg Arg Thr Leu Leu
                530                 535                 540
gag gac aag ctc ccg cac att ttc ggg ttc acg ctg ctg ggg gac ttc        1741
Glu Asp Lys Leu Pro His Ile Phe Gly Phe Thr Leu Leu Gly Asp Phe
            545                 550                 555
atc tac tgg act gac tgg cag cgc cgc agc atc gag cgg gtg cac aag        1789
Ile Tyr Trp Thr Asp Trp Gln Arg Arg Ser Ile Glu Arg Val His Lys
        560                 565                 570
gtc aag gcc agc cgg gac gtc atc att gac cag ctg ccc gac ctg atg        1837
Val Lys Ala Ser Arg Asp Val Ile Ile Asp Gln Leu Pro Asp Leu Met
    575                 580                 585
ggg ctc aaa gct gtg aat gtg gcc aag gtc gtc gga acc aac ccg tgt        1885
Gly Leu Lys Ala Val Asn Val Ala Lys Val Val Gly Thr Asn Pro Cys
590                 595                 600                 605
gcg gac agg aac ggg ggg tgc agc cac ctg tgc ttc ttc aca ccc cac        1933
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Ala Asp Arg Asn Gly Gly Cys Ser His Leu Cys Phe Phe Thr Pro His
                610                 615                 620
gca acc cgg tgt ggc tgc ccc atc ggc ctg gag ctg ctg agt gac atg         1981
Ala Thr Arg Cys Gly Cys Pro Ile Gly Leu Glu Leu Leu Ser Asp Met
            625                 630                 635
aag acc tgc atc gtg cct gag gcc ttc ttg gtc ttc acc agc aga gcc         2029
Lys Thr Cys Ile Val Pro Glu Ala Phe Leu Val Phe Thr Ser Arg Ala
        640                 645                 650
gcc atc cac agg atc tcc ctc gag acc aat aac aac gac gtg gcc atc         2077
Ala Ile His Arg Ile Ser Leu Glu Thr Asn Asn Asn Asp Val Ala Ile
    655                 660                 665
ccg ctc acg ggc gtc aag gag gcc tca gcc ctg gac ttt gat gtg tcc         2125
Pro Leu Thr Gly Val Lys Glu Ala Ser Ala Leu Asp Phe Asp Val Ser
670                 675                 680                 685
aac aac cac atc tac tgg aca gac gtc agc ctg aag acc atc agc cgc         2173
Asn Asn His Ile Tyr Trp Thr Asp Val Ser Leu Lys Thr Ile Ser Arg
                690                 695                 700
gcc ttc atg aac ggg agc tcg gtg gag cac gtg gtg gag ttt ggc ctt         2221
Ala Phe Met Asn Gly Ser Ser Val Glu His Val Val Glu Phe Gly Leu
            705                 710                 715
gac tac ccc gag ggc atg gcc gtt gac tgg atg ggc aag aac ctc tac         2269
Asp Tyr Pro Glu Gly Met Ala Val Asp Trp Met Gly Lys Asn Leu Tyr
        720                 725                 730
tgg gcc gac act ggg acc aac aga atc gaa gtg gcg cgg ctg gac ggg         2317
Trp Ala Asp Thr Gly Thr Asn Arg Ile Glu Val Ala Arg Leu Asp Gly
    735                 740                 745
cag ttc cgg caa gtc ctc gtg tgg agg gac ttg gac aac ccg agg tcg         2365
Gln Phe Arg Gln Val Leu Val Trp Arg Asp Leu Asp Asn Pro Arg Ser
750                 755                 760                 765
ctg gcc ctg gat ccc acc aag ggc tac atc tac tgg acc gag tgg ggc         2413
Leu Ala Leu Asp Pro Thr Lys Gly Tyr Ile Tyr Trp Thr Glu Trp Gly
                770                 775                 780
ggc aag ccg agg atc gtg cgg gcc ttc atg gac ggg acc aac tgc atg         2461
Gly Lys Pro Arg Ile Val Arg Ala Phe Met Asp Gly Thr Asn Cys Met
            785                 790                 795
acg ctg gtg gac aag gtg ggc cgg gcc aac gac ctc acc att gac tac         2509
Thr Leu Val Asp Lys Val Gly Arg Ala Asn Asp Leu Thr Ile Asp Tyr
        800                 805                 810
gct gac cag cgc ctc tac tgg acc gac ctg gac acc aac atg atc gag         2557
Ala Asp Gln Arg Leu Tyr Trp Thr Asp Leu Asp Thr Asn Met Ile Glu
    815                 820                 825
tcg tcc aac atg ctg ggt cag gag cgg gtc gtg att gcc gac gat ctc         2605
Ser Ser Asn Met Leu Gly Gln Glu Arg Val Val Ile Ala Asp Asp Leu
830                 835                 840                 845
ccg cac ccg ttc ggt ctg acg cag tac agc gat tat atc tac tgg aca         2653
Pro His Pro Phe Gly Leu Thr Gln Tyr Ser Asp Tyr Ile Tyr Trp Thr
                850                 855                 860
gac tgg aat ctg cac agc att gag cgg gcc gac aag act agc ggc cgg         2701
Asp Trp Asn Leu His Ser Ile Glu Arg Ala Asp Lys Thr Ser Gly Arg
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            865                 870                 875
aac cgc acc ctc atc cag ggc cac ctg gac ttc gtg atg gac atc ctg        2749
Asn Arg Thr Leu Ile Gln Gly His Leu Asp Phe Val Met Asp Ile Leu
        880                 885                 890
gtg ttc cac tcc tcc cgc cag gat ggc ctc aat gac tgt atg cac aac        2797
Val Phe His Ser Ser Arg Gln Asp Gly Leu Asn Asp Cys Met His Asn
    895                 900                 905
aac ggg cag tgt ggg cag ctg tgc ctt gcc atc ccc ggc ggc cac cgc        2845
Asn Gly Gln Cys Gly Gln Leu Cys Leu Ala Ile Pro Gly Gly His Arg
910                 915                 920                 925
tgc ggc tgc gcc tca cac tac acc ctg gac ccc agc agc cgc aac tgc        2893
Cys Gly Cys Ala Ser His Tyr Thr Leu Asp Pro Ser Ser Arg Asn Cys
                930                 935                 940
agc ccg ccc acc acc ttc ttg ctg ttc agc cag aaa tct gcc atc agt        2941
Ser Pro Pro Thr Thr Phe Leu Leu Phe Ser Gln Lys Ser Ala Ile Ser
            945                 950                 955
cgg atg atc ccg gac gac cag cac agc ccg gat ctc atc ctg ccc ctg        2989
Arg Met Ile Pro Asp Asp Gln His Ser Pro Asp Leu Ile Leu Pro Leu
        960                 965                 970
cat gga ctg agg aac gtc aaa gcc atc gac tat gac cca ctg gac aag        3037
His Gly Leu Arg Asn Val Lys Ala Ile Asp Tyr Asp Pro Leu Asp Lys
    975                 980                 985
ttc atc tac tgg gtg gat ggg cgc cag aac atc aag cga gcc aag gac        3085
Phe Ile Tyr Trp Val Asp Gly Arg Gln Asn Ile Lys Arg Ala Lys Asp
990                 995                 1000                1005
gac ggg acc cag ccc ttt gtt ttg acc tct ctg agc caa ggc caa aac        3133
Asp Gly Thr Gln Pro Phe Val Leu Thr Ser Leu Ser Gln Gly Gln Asn
                1010                1015                1020
cca gac agg cag ccc cac gac ctc agc atc gac atc tac agc cgg aca        3181
Pro Asp Arg Gln Pro His Asp Leu Ser Ile Asp Ile Tyr Ser Arg Thr
            1025                1030                1035
ctg ttc tgg acg tgc gag gcc acc aat acc atc aac gtc cac agg ctg        3229
Leu Phe Trp Thr Cys Glu Ala Thr Asn Thr Ile Asn Val His Arg Leu
        1040                1045                1050
agc ggg gaa gcc atg ggg gtg gtg ctg cgt ggg gac cgc gac aag ccc        3277
Ser Gly Glu Ala Met Gly Val Val Leu Arg Gly Asp Arg Asp Lys Pro
    1055                1060                1065
agg gcc atc gtc gtc aac gcg gag cga ggg tac ctg tac ttc acc aac        3325
Arg Ala Ile Val Val Asn Ala Glu Arg Gly Tyr Leu Tyr Phe Thr Asn
1070                1075                1080                1085
atg cag gac cgg gca gcc aag atc gaa cgc gca gcc ctg gac ggc acc        3373
Met Gln Asp Arg Ala Ala Lys Ile Glu Arg Ala Ala Leu Asp Gly Thr
                1090                1095                1100
gag cgc gag gtc ctc ttc acc acc ggc ctc atc cgc cct gtg gcc ctg        3421
Glu Arg Glu Val Leu Phe Thr Thr Gly Leu Ile Arg Pro Val Ala Leu
            1105                1110                1115
gtg gtg gac aac aca ctg ggc aag ctg ttc tgg gtg gac gcg gac ctg        3469
Val Val Asp Asn Thr Leu Gly Lys Leu Phe Trp Val Asp Ala Asp Leu
        1120                1125                1130
```

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                    RAW SEQUENCE LISTING ERROR SUMMARY      DATE: 08/10/2004
                    PATENT APPLICATION:  US/10/680,287A      TIME: 12:13:56

                    Input Set : A:\032796-179.TXT
                    Output Set: N:\CRF4\08102004\J680287A.raw

lease Note:
se of n and/or Xaa have been detected in the Sequence Listing. Please review the
equence Listing to ensure that a corresponding explanation is presented in the <220>
o <223> fields of each sequence which presents at least one n or Xaa.

eq#:6; N Pos. 12044,12489,26433,26434,26435,26436,26439,26441
eq#:7; N Pos. 4336,4345,4349,4392,4447,4490
eq#:8; N Pos. 33739,33749,33758
eq#:9; N Pos. 8356,8385,38585
eq#:165; N Pos. 12
eq#:257; N Pos. 8
eq#:643; N Pos. 23,42
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                    VERIFICATION SUMMARY                    DATE: 08/10/2004
                    PATENT APPLICATION:  US/10/680,287A      TIME: 12:13:56

                    Input Set : A:\032796-179.TXT
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L:1359 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:12000
M:341 Repeated in SeqNo=6
L:1692 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:4320
M:341 Repeated in SeqNo=7
L:2685 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:33720
L:2837 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:8340
M:341 Repeated in SeqNo=9
L:6590 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:165 after pos.:0
L:7331 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:257 after pos.:0
L:7345 M:283 W: Missing Blank Line separator, <400> field identifier
L:10537 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:643 after pos.:0
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